Seeb, J. E., and G. D. Miller. 1990. The integration of allozyme analyses and genomic manipulations for fish culture and management. Pages 265-271 [In] D. H. Whitmore, editor. Electrophoretic and isoelectric focusing techniques in fisheries management. CRC Press, Boca Raton, FL.

Abstract: Book description: Probably the most ubiquitous biochemical method used today for examining the genetics of individuals, populations, or phylogenetic relationships between taxa is electrophoresis. This book has been created to offer a viewpoint regarding current electrophoretic separation methodologies of macromolecules and their major applications to fisheries management. The chapters in this book have been selected and organized into three sections to create a carefully blended mixture of methodologies and applications designed to educate the novice, as well as stimulate interest in professional researchers currently using electrophoresis for their work. The first section includes chapters that discuss the principles that explain the genetic basis of multiple molecular forms of proteins, the theory and practice of DNA analyses, and the methodology of electrophoretic separation of these macromolecules; starch gel electrophoresis as the predominant electrophoretic tool for fisheries genetics; and protein isoelectric focusing and DNA analysis. The second section describes a variety of applications for electrophoretic techniques. The third section presents a discussion and results of experiments conducted by Dennis Powers and his associates regarding the physiological significance of multiple forms of enzymes using the fish Fundulus heteroclitus as a model system. The book features a catalog of nearly 100 enzyme staining recipes and covers new areas in electrophoretic work, such as DNA fingerprinting, genetic tags, mitochondrial DNA methodologies, and genomic manipulation of fish stocks. This book will provide a useful reference resource for fisheries biologists at federal, state, and local levels; fisheries researchers at universities; and students pursuing degrees involving research in fish genetics.

Keywords: Not available.

Paper No. NA